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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/294,563	04/20/1999	KURT E. SCHMIDT	08640/018001	6271

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TERADYNE, INC  
321 HARRISON AVE  
BOSTON, MA 02118

EXAMINER

NGUYEN, DUC MINH

ART UNIT	PAPER NUMBER
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2643

26

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/294,563

Applicant(s)

SCHMIDT ET AL.

Examiner

Duc Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19, 21-24, 26, 27, 30, 31 and 34-57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-11, 24, 26, 27, 30, 31, 34-43 and 46-57 is/are allowed.
- 6) ☒ Claim(s) 12, 19, 44 and 45 is/are rejected.
- 7) ☒ Claim(s) 13-18 and 21-23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eichen et al (6,292,539) in view of Posthuma et al (6,349,130).

Consider claim 12. Eichen teaches a method of qualifying a line for data transmission, comprising identifying a proxy line (i.e., line intended to be tested/qualified) in a cable carrying the customer line (i.e., other cable pairs in the same binder group as the loop to be qualified; col. 3, ln. 16-21; col. 6, ln. 13-20); performing electrical measurements on the proxy line (col. 6, ln. 21-46); and predicting the data rate for the customer line (e.g., a method consistent with the present invention performs some or all of data collection steps 240, 250, 260, and 270. These steps are not necessarily performed in a particular order, and some steps may be performed simultaneously. For example, FIG. 5 shows steps 240 and 250 being performed at the same time as steps 260 and 270. Each of these steps involves obtaining information about the loop to be qualified from a database or a test or measurement system in the network, and all of the information obtained is used as input to step 280, which applies a plurality of rules to the information to model the

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response of the network and determine which digital subscriber services are available on the loop. Step 240 may also include a query of a separate database (not shown in FIG. 4) that stores recent measurements of the loop length. Referring again to FIG. 5, in step 250 the server queries facilities database 130 using the unique loop identifier to determine the services on other cable pairs in the same binder group as the loop to be qualified; col. 6, ln. 13-20) from the measurements (col. 6, ln. 47-60; col. 7, ln. 14-30). It is noted that the system uses the information from other cable pairs in the same binder group as the loop to be qualified to make the determination regarding the DSL services. Eichen, however, does not clearly state whether the test is performed by one-ended electrical measurements or not.

Posthuma teaches performing one-ended electrical measurement on a subscriber line (col. 2, ln. 3-11; col. 3, ln. 35-45; col. 3, ln. 55 to col. 4, ln. 5, ln. 12-24). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Posthuma into the teachings of Eichen in order to provide reliable results irrespective of whether terminal equipment is installed on the telephone line.

3. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eichen et al (6,292,539) in view of Posthuma et al (6,349,130) and Burgess (6,111,861).

Consider claim 19. Eichen teaches a method of qualifying a line for data transmission, comprising identifying a proxy line (i.e., line intended to be tested/qualified) in a cable carrying the customer line (i.e., other cable pairs in the same binder group as the loop to be qualified; col. 3,

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ln. 16-21; col. 6, ln. 13-20); performing electrical measurements on the proxy line (col. 6, ln. 21-46); and predicting the data rate for the customer line (e.g., a method consistent with the present invention performs some or all of data collection steps 240, 250, 260, and 270. These steps are not necessarily performed in a particular order, and some steps may be performed simultaneously. For example, FIG. 5 shows steps 240 and 250 being performed at the same time as steps 260 and 270. Each of these steps involves obtaining information about the loop to be qualified from a database or a test or measurement system in the network, and all of the information obtained is used as input to step 280, which applies a plurality of rules to the information to model the response of the network and determine which digital subscriber services are available on the loop. Step 240 may also include a query of a separate database (not shown in FIG. 4) that stores recent measurements of the loop length. Referring again to FIG. 5, in step 250 the server queries facilities database 130 using the unique loop identifier to determine the services on other cable pairs in the same binder group as the loop to be qualified; col. 6, ln. 13-20) from the measurements (col. 6, ln. 47-60; col. 7, ln. 14-30). It is noted that the system uses the information from other cable pairs in the same binder group as the loop to be qualified to make the determination regarding the DSL services. Eichen, however, does not clearly state whether the test is performed by one-ended electrical measurements or not.

Posthuma teaches performing one-ended electrical measurement on a subscriber line (col. 2, ln. 3-11; col. 3, ln. 35-45; col. 3, ln. 55 to col. 4, ln. 5, ln. 12-24). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of

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Posthuma into the teachings of Eichen in order to provide reliable results irrespective of whether terminal equipment is installed on the telephone line.

Eichen in view of Posthuma does not explicitly teach determining whether the line at issue is billed as a high speed analog data line or an analog voice (or low speed analog data) line.

Burgess teaches determining whether the line at issue is billed as a high speed analog data line or an analog voice (or low speed analog data) line (col. 10, ln. 21-63).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Burgess into the teachings of Eichen in view of Posthuma, so that appropriate charging rate can be accurately applied to the communication connection.

4. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beierle (6,084,946) in view of Bjork et al (5,128,619).

Consider claim 44. Beierle teaches a method of determining the attenuation of a customer's telephone line, comprising performing a plurality of one-ended electrical measurements of frequency dependent admittances of the customer's telephone line, the measurements being performed in a first frequency range (col. 2, ln. 47-58; col. 4, ln. 25 to col. 5, ln. 18; col. 6, ln. 25 to col. 8, ln. 36); processing the measurements by a set of logical decision trees (col. 6, ln. 25 to col. 8, ln. 36); and adjusting values of a frequency-dependent values (col. 6, ln. 48 to col. 8, ln. 36) for an average telephone line to predict a qualification for digital signal

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transmission (i.e., changing of any values in equations (1)-(8) would predict a qualification for digital signal transmission of the customer's telephone line) of the customer's telephone line in a second frequency range (xDSL range; e.g., determining whether the wire pair is qualified or not qualified for carrying xDSL), the act of adjusting being responsive to results from the logical decision trees.

Beierle does not clearly teach the computer is adapted to determine a frequency dependent attenuation from the measurement.

Bjork teaches the computer (14) is adapted to determine a frequency dependent attenuation from the measurement (col. 2, ln. 52-57; col. 3, ln. 23-30; col. 3, ln. 31 to col. 5, ln. 34). Furthermore, changing of any values in the equations (col. 3, ln. 45 to col. 4, ln. 39) would predict a qualification for digital signal transmission of the customer's telephone line).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Bjork into the teachings of Beierle in order to provide a test apparatus for testing cable for digital applications from one end of the cable, so as to eliminate additional personnel and reduce cost associated with determining the quality of the communication cable.

5. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beierle (6,084,946) in view of Bjork et al (5,128,619) as applied to claim 44 above, and further in view of Nagato (5,400,321).

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Consider claims 5, 14, 37. Beierle in view of Bjork does not clearly teach that the act of measuring includes finding at least of  $Y_{tr}$ ,  $Y_{rg}$  and  $Y_{tg}$  for the customer line.

Nagato teaches the act of measuring includes finding at least of  $Y_{tr}$ ,  $Y_{rg}$  and  $Y_{tg}$  for the customer line (see fig. 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Nagato into the teachings of Beierle in view of Bjork in order to accurately and remotely detect a fault on a subscriber line.

***Allowable Subject Matter***

6. Claims 1-11, 24, 26-27, 30-31, 34-43, 46-57 are allowed.
7. Claims 13-18, 21-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc Nguyen whose telephone number is (703) 308-7527.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Kuntz, can be reached on (703) 305-4708.



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**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

703-872-9306  
Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal  
Drive, Arlington. VA., Sixth Floor (Receptionist).

October 30, 2003

  
DUC NGUYEN  
PRIMARY EXAMINER